

EXHIBIT D

Part 1



Financial Accounting Standards Board

ORIGINAL PRONOUNCEMENTS

AS AMENDED

Statement of Financial Accounting Standards No. 157

Fair Value Measurements

Copyright © 2008 by Financial Accounting Standards Board. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the Financial Accounting Standards Board.

Statement of Financial Accounting Standards No. 157

Fair Value Measurements

STATUS

Issued: September 2006

Effective Date: For financial statements issued for fiscal years beginning after November 15, 2007, and interim periods within those fiscal years

Affects: Amends APB 21, paragraphs 13 and 18
Deletes APB 21, footnote 1
Amends APB 28, paragraph 30
Amends APB 29, paragraphs 18 and 20(a)
Deletes APB 29, paragraph 25 and footnote 5
Amends FAS 13, paragraph 5(c)
Amends FAS 15, paragraphs 13 and 28
Deletes FAS 15, footnotes 2, 5a, and 6
Amends FAS 19, paragraph 47(i)(i)
Amends FAS 35, paragraph 11 and footnote 5
Deletes FAS 35, footnote 4a
Amends FAS 60, paragraph 19
Deletes FAS 60, footnote 4a
Amends FAS 63, paragraphs 4, 8, and 38 through 40
Amends FAS 65, paragraphs 4, 6, 9, 10, 12, and 29
Amends FAS 67, paragraphs 8 and 28
Deletes FAS 67, footnote 6
Amends FAS 87, paragraphs 49 and 264 and footnote 12
Deletes FAS 87, footnote 11a
Amends FAS 106, paragraphs 65 and 518 and footnote 21
Deletes FAS 106, footnote 20a
Deletes FAS 107, paragraphs 5, 6, 11, and 18 through 29
Amends FAS 107, paragraphs 9, 10, 30, and 31
Amends FAS 115, paragraphs 3(a) and 137
Replaces FAS 115, footnote 2
Amends FAS 116, paragraphs 19, 20, 184, 186, and 208
Deletes FAS 116, footnote 8
Amends FAS 124, paragraphs 3(a) and 112
Replaces FAS 124, footnote 3
Deletes FAS 133, paragraph 16A and footnote 6c
Amends FAS 133, paragraphs 17 and 540
Effectively deletes FAS 133, footnotes 9b, 10b, 18a, 18b, 20a through 20e, and 24a
Amends FAS 136, Summary and paragraphs 15 and 36
Amends FAS 140, paragraphs 11(c), 17(h), 17(i), 63(b), and 364
Deletes FAS 140, paragraphs 68 through 70 and footnotes 20 and 21
Amends FAS 141, paragraph F1
Amends FAS 142, paragraphs 3, 19, 23, and F1
Deletes FAS 142, paragraphs 24, E1, and E2 and footnotes 12 and 16
Deletes FAS 143, paragraphs 6, 7, 9, A19, and F1 through F4 and footnotes 5 through 8, 17, and 19
Amends FAS 143, paragraphs 8, A20, A21, A26, C1, C3(d), C4, C6 through C9, C11, and C12 and footnotes 12 and 18
Deletes FAS 144, paragraphs 22, 24, A12, and E1 through E3 and footnotes 12 through 14, 28, and 29
Amends FAS 144, paragraphs 23, A6 through A8, A11, A13, and A14

Deletes FAS 146, paragraphs 5, A4, and A5 and footnotes 13 through 16

Amends FAS 146, paragraph A2

Amends FAS 150, paragraph D1

Deletes FAS 156, paragraph 3(c)

Amends FIN 45, paragraphs 9(a) and 9(b)

Affected by: Paragraph 2 amended by FSP FAS 157-1, paragraph 9(a)

Paragraph 36 amended by FSP FAS 157-2, paragraph 11

Paragraph D1 amended by FSP FAS 157-1, paragraph 9(b)

Footnote 2 amended by FAS 141(R), paragraph E4(a)

Other Interpretive Releases: FASB Staff Positions FAS 157-1 and FAS 157-2

Issues Discussed by FASB Emerging Issues Task Force (EITF)

Affects: Modifies EITF Issue No. 02-3

Interpreted by: No EITF Issues

Related Issues: No EITF Issues

SUMMARY

This Statement defines fair value, establishes a framework for measuring fair value in generally accepted accounting principles (GAAP), and expands disclosures about fair value measurements. This Statement applies under other accounting pronouncements that require or permit fair value measurements, the Board having previously concluded in those accounting pronouncements that fair value is the relevant measurement attribute. Accordingly, this Statement does not require any new fair value measurements. However, for some entities, the application of this Statement will change current practice.

Reason for Issuing This Statement

Prior to this Statement, there were different definitions of fair value and limited guidance for applying those definitions in GAAP. Moreover, that guidance was dispersed among the many accounting pronouncements that require fair value measurements. Differences in that guidance created inconsistencies that added to the complexity in applying GAAP. In developing this Statement, the Board considered the need for increased consistency and comparability in fair value measurements and for expanded disclosures about fair value measurements.

Differences between This Statement and Current Practice

The changes to current practice resulting from the application of this Statement relate to the definition of fair value, the methods used to measure fair value, and the expanded disclosures about fair value measurements.

The definition of fair value retains the exchange price notion in earlier definitions of fair value. This Statement clarifies that the exchange price is the price in an orderly transaction between market participants to sell the asset or transfer the liability in the market in which the reporting entity would transact for the asset or liability, that is, the principal or most advantageous market for the asset or liability. The transaction to sell the asset or transfer the liability is a hypothetical transaction at the measurement date, considered from the perspective of a market participant that holds the asset or owes the liability. Therefore, the definition focuses on the price that would be received to sell the asset or paid to transfer the liability (an exit price), not the price that would be paid to acquire the asset or received to assume the liability (an entry price).

This Statement emphasizes that fair value is a market-based measurement, not an entity-specific measurement. Therefore, a fair value measurement should be determined based on the assumptions that market participants would use in pricing the asset or liability. As a basis for considering market participant assumptions in fair value measurements, this Statement establishes a fair value hierarchy that distinguishes between (1) market participant assumptions developed based on market data obtained from sources independent of the reporting entity (observable inputs) and (2) the reporting entity's own assumptions about market participant assumptions developed based on the best information available in the circumstances (unobservable inputs). The notion of

unobservable inputs is intended to allow for situations in which there is little, if any, market activity for the asset or liability at the measurement date. In those situations, the reporting entity need not undertake all possible efforts to obtain information about market participant assumptions. However, the reporting entity must not ignore information about market participant assumptions that is reasonably available without undue cost and effort.

This Statement clarifies that market participant assumptions include assumptions about risk, for example, the risk inherent in a particular valuation technique used to measure fair value (such as a pricing model) and/or the risk inherent in the inputs to the valuation technique. A fair value measurement should include an adjustment for risk if market participants would include one in pricing the related asset or liability, even if the adjustment is difficult to determine. Therefore, a measurement (for example, a “mark-to-model” measurement) that does not include an adjustment for risk would not represent a fair value measurement if market participants would include one in pricing the related asset or liability.

This Statement clarifies that market participant assumptions also include assumptions about the effect of a restriction on the sale or use of an asset. A fair value measurement for a restricted asset should consider the effect of the restriction if market participants would consider the effect of the restriction in pricing the asset. That guidance applies for stock with restrictions on sale that terminate within one year that is measured at fair value under FASB Statements No. 115, *Accounting for Certain Investments in Debt and Equity Securities*, and No. 124, *Accounting for Certain Investments Held by Not-for-Profit Organizations*.

This Statement clarifies that a fair value measurement for a liability reflects its nonperformance risk (the risk that the obligation will not be fulfilled). Because nonperformance risk includes the reporting entity’s credit risk, the reporting entity should consider the effect of its credit risk (credit standing) on the fair value of the liability in all periods in which the liability is measured at fair value under other accounting pronouncements, including FASB Statement No. 133, *Accounting for Derivative Instruments and Hedging Activities*.

This Statement affirms the requirement of other FASB Statements that the fair value of a position in a financial instrument (including a block) that trades in an active market should be measured as the product of the quoted price for the individual instrument times the quantity held (within Level 1 of the fair value hierarchy). The quoted price should not be adjusted because of the size of the position relative to trading volume (blockage factor). This Statement extends that requirement to broker-dealers and investment companies within the scope of the AICPA Audit and Accounting Guides for those industries.

This Statement expands disclosures about the use of fair value to measure assets and liabilities in interim and annual periods subsequent to initial recognition. The disclosures focus on the inputs used to measure fair value and for recurring fair value measurements using significant unobservable inputs (within Level 3 of the fair value hierarchy), the effect of the measurements on earnings (or changes in net assets) for the period. This Statement encourages entities to combine the fair value information disclosed under this Statement with the fair value information disclosed under other accounting pronouncements, including FASB Statement No. 107, *Disclosures about Fair Value of Financial Instruments*, where practicable.

The guidance in this Statement applies for derivatives and other financial instruments measured at fair value under Statement 133 at initial recognition and in all subsequent periods. Therefore, this Statement nullifies the guidance in footnote 3 of EITF Issue No. 02-3, “Issues Involved in Accounting for Derivative Contracts Held for Trading Purposes and Contracts Involved in Energy Trading and Risk Management Activities.” This Statement also amends Statement 133 to remove the similar guidance to that in Issue 02-3, which was added by FASB Statement No. 155, *Accounting for Certain Hybrid Financial Instruments*.

How the Conclusions in This Statement Relate to the FASB’s Conceptual Framework

The framework for measuring fair value considers the concepts in FASB Concepts Statement No. 2, *Qualitative Characteristics of Accounting Information*. Concepts Statement 2 emphasizes that providing comparable information enables users of financial statements to identify similarities in and differences between two sets of economic events.

The definition of fair value considers the concepts relating to assets and liabilities in FASB Concepts Statement No. 6, *Elements of Financial Statements*, in the context of market participants. A fair value measurement reflects current market participant assumptions about the future inflows associated with an asset (future economic benefits) and the future outflows associated with a liability (future sacrifices of economic benefits).

This Statement incorporates aspects of the guidance in FASB Concepts Statement No. 7, *Using Cash Flow Information and Present Value in Accounting Measurements*, as clarified and/or reconsidered in this Statement. This Statement does not revise Concepts Statement 7. The Board will consider the need to revise Concepts Statement 7 in its conceptual framework project.

The expanded disclosures about the use of fair value to measure assets and liabilities should provide users of financial statements (present and potential investors, creditors, and others) with information that is useful in making investment, credit, and similar decisions—the first objective of financial reporting in FASB Concepts Statement No. 1, *Objectives of Financial Reporting by Business Enterprises*.

How the Changes in This Statement Improve Financial Reporting

A single definition of fair value, together with a framework for measuring fair value, should result in increased consistency and comparability in fair value measurements.

The expanded disclosures about the use of fair value to measure assets and liabilities should provide users of financial statements with better information about the extent to which fair value is used to measure recognized assets and liabilities, the inputs used to develop the measurements, and the effect of certain of the measurements on earnings (or changes in net assets) for the period.

The amendments made by this Statement advance the Board's initiatives to simplify and codify the accounting literature, eliminating differences that have added to the complexity in GAAP.

Costs and Benefits of Applying This Statement

The framework for measuring fair value builds on current practice and requirements. However, some entities will need to make systems and other changes to comply with the requirements of this Statement. Some entities also might incur incremental costs in applying the requirements of this Statement. However, the benefits from increased consistency and comparability in fair value measurements and expanded disclosures about those measurements should be ongoing.

The Effective Date of This Statement

This Statement is effective for financial statements issued for fiscal years beginning after November 15, 2007, and interim periods within those fiscal years. Earlier application is encouraged, provided that the reporting entity has not yet issued financial statements for that fiscal year, including financial statements for an interim period within that fiscal year.

The provisions of this Statement should be applied prospectively as of the beginning of the fiscal year in which this Statement is initially applied, except as follows. The provisions of this Statement should be applied retrospectively to the following financial instruments as of the beginning of the fiscal year in which this Statement is initially applied (a limited form of retrospective application):

- a. A position in a financial instrument that trades in an active market held by a broker-dealer or investment company within the scope of the AICPA Audit and Accounting Guides for those industries that was measured at fair value using a blockage factor prior to initial application of this Statement
- b. A financial instrument that was measured at fair value at initial recognition under Statement 133 using the transaction price in accordance with the guidance in footnote 3 of Issue 02-3 prior to initial application of this Statement
- c. A hybrid financial instrument that was measured at fair value at initial recognition under Statement 133 using the transaction price in accordance with the guidance in Statement 133 (added by Statement 155) prior to initial application of this Statement.

The transition adjustment, measured as the difference between the carrying amounts and the fair values of those financial instruments at the date this Statement is initially applied, should be recognized as a cumulative-effect adjustment to the opening balance of retained earnings (or other appropriate components of equity or net assets in the statement of financial position) for the fiscal year in which this Statement is initially applied.

Statement of Financial Accounting Standards No. 157

Fair Value Measurements

CONTENTS

	Paragraph Numbers
Objective.....	1
Standards of Financial Accounting and Reporting:	
Scope.....	2-4
Measurement.....	5-31
Definition of Fair Value.....	5-15
The Asset or Liability.....	6
The Price.....	7
The Principal (or Most Advantageous) Market.....	8-9
Market Participants.....	10-11
Application to Assets.....	12-14
Application to Liabilities.....	15
Fair Value at Initial Recognition.....	16-17
Valuation Techniques.....	18-20
Inputs to Valuation Techniques.....	21
Fair Value Hierarchy.....	22-31
Level 1 Inputs.....	24-27
Level 2 Inputs.....	28-29
Level 3 Inputs.....	30
Inputs Based on Bid and Ask Prices.....	31
Disclosures.....	32-35
Effective Date and Transition.....	36-39
Appendix A: Implementation Guidance.....	A1-A36
Appendix B: Present Value Techniques.....	B1-B19
Appendix C: Background Information and Basis for Conclusions.....	C1-C116
Appendix D: References to APB and FASB Pronouncements.....	D1
Appendix E: Amendments to APB and FASB Pronouncements.....	E1-E32

OBJECTIVE

1. This Statement defines fair value, establishes a framework for measuring fair value, and expands disclosures about fair value measurements. Where applicable, this Statement simplifies and codifies related guidance within generally accepted accounting principles (GAAP).

STANDARDS OF FINANCIAL ACCOUNTING AND REPORTING

Scope

2. This Statement applies under other accounting pronouncements¹ that require or permit fair value measurements, except as follows:

- a. This Statement does not apply under accounting pronouncements that address share-based payment transactions: FASB Statement No. 123 (revised 2004), *Share-Based Payment*, and its related interpretive accounting pronouncements that address share-based payment transactions.
- b. This Statement does not eliminate the practicability exceptions to fair value measurements in accounting pronouncements within the scope of this Statement.²
- c. This Statement does not apply under FASB Statement No. 13, *Accounting for Leases*, and other accounting pronouncements that address fair value measurements for purposes of lease classification or measurement under Statement 13. This scope exception does not apply to assets acquired and liabilities assumed in a business combination that are required to be meas-

ured at fair value under Statement 141 or Statement 141(R), regardless of whether those assets and liabilities are related to leases.

3. This Statement does not apply under accounting pronouncements that require or permit measurements that are similar to fair value but that are not intended to measure fair value, including the following:

- a. Accounting pronouncements that permit measurements that are based on, or otherwise use, vendor-specific objective evidence of fair value³
- b. ARB No. 43, Chapter 4, "Inventory Pricing."

4. Appendix D lists pronouncements of the Accounting Principles Board (APB) and the FASB existing at the date of this Statement that are within the scope of this Statement. Appendix E lists those APB and FASB pronouncements that are amended by this Statement.

Measurement

Definition of Fair Value

5. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

The asset or liability

6. A fair value measurement is for a particular asset or liability.⁴ Therefore, the measurement should consider attributes specific to the asset or liability, for example, the condition and/or location of the asset or liability and restrictions, if any, on the sale or use of the

¹This Statement uses the term *accounting pronouncements* consistent with its use in paragraph 2(b) of FASB Statement No. 154, *Accounting Changes and Error Corrections*.

²Accounting pronouncements that permit practicability exceptions to fair value measurements in specified circumstances include APB Opinion No. 29, *Accounting for Nonmonetary Transactions*; FASB Statements No. 87, *Employers' Accounting for Pensions*; No. 106, *Employers' Accounting for Postretirement Benefits Other Than Pensions*; No. 107, *Disclosures about Fair Value of Financial Instruments*; No. 116, *Accounting for Contributions Received and Contributions Made*; No. 140, *Accounting for Transfers and Servicing of Financial Assets and Extinguishments of Liabilities*; No. 141, *Business Combinations*; No. 141 (revised 2007), *Business Combinations*; No. 143, *Accounting for Asset Retirement Obligations*; No. 146, *Accounting for Costs Associated with Exit or Disposal Activities*; and No. 153, *Exchanges of Nonmonetary Assets*, and FASB Interpretations No. 45, *Guarantor's Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others*; and No. 47, *Accounting for Conditional Asset Retirement Obligations*. Also included among those pronouncements are AICPA Audit and Accounting Guide, *Not-for-Profit Organizations*; and EITF Issues No. 85-40, "Comprehensive Review of Sales of Marketable Securities with Put Arrangements," and No. 99-17, "Accounting for Advertising Barter Transactions."

³Accounting pronouncements that permit measurements that are based on, or otherwise use, vendor-specific objective evidence of fair value include AICPA Statement of Position 97-2, *Software Revenue Recognition*, as modified by AICPA Statement of Position 98-9, *Modification of SOP 97-2, Software Revenue Recognition, With Respect to Certain Transactions*. Also included among those pronouncements are EITF Issues No. 00-3, "Application of AICPA Statement of Position 97-2 to Arrangements That Include the Right to Use Software Stored on Another Entity's Hardware," and No. 00-21, "Revenue Arrangements with Multiple Deliverables."

⁴The definition of fair value focuses on assets and liabilities because they are a primary subject of accounting measurement. However, the definition of fair value also should be applied to instruments measured at fair value that are classified in stockholders' equity.

asset at the measurement date. The asset or liability might be a standalone asset or liability (for example, a financial instrument or an operating asset) or a group of assets and/or liabilities (for example, an asset group, a reporting unit, or a business). Whether the asset or liability is a standalone asset or liability or a group of assets and/or liabilities depends on its unit of account. The unit of account determines what is being measured by reference to the level at which the asset or liability is aggregated (or disaggregated) for purposes of applying other accounting pronouncements. The unit of account for the asset or liability should be determined in accordance with the provisions of other accounting pronouncements, except as provided in paragraph 27.

The price

7. A fair value measurement assumes that the asset or liability is exchanged in an orderly transaction between market participants to sell the asset or transfer the liability at the measurement date. An orderly transaction is a transaction that assumes exposure to the market for a period prior to the measurement date to allow for marketing activities that are usual and customary for transactions involving such assets or liabilities; it is not a forced transaction (for example, a forced liquidation or distress sale). The transaction to sell the asset or transfer the liability is a hypothetical transaction at the measurement date, considered from the perspective of a market participant that holds the asset or owes the liability. Therefore, the objective of a fair value measurement is to determine the price that would be received to sell the asset or paid to transfer the liability at the measurement date (an exit price).

The principal (or most advantageous) market

8. A fair value measurement assumes that the transaction to sell the asset or transfer the liability occurs in the principal market for the asset or liability or, in the absence of a principal market, the most advantageous market for the asset or liability. The principal market is the market in which the reporting entity would sell the asset or transfer the liability with the greatest volume and level of activity for the asset or liability. The most advantageous market is the market

in which the reporting entity would sell the asset or transfer the liability with the price that maximizes the amount that would be received for the asset or minimizes the amount that would be paid to transfer the liability, considering transaction costs in the respective market(s). In either case, the principal (or most advantageous) market (and thus, market participants) should be considered from the perspective of the reporting entity, thereby allowing for differences between and among entities with different activities. If there is a principal market for the asset or liability, the fair value measurement shall represent the price in that market (whether that price is directly observable or otherwise determined using a valuation technique), even if the price in a different market is potentially more advantageous at the measurement date.

9. The price in the principal (or most advantageous) market used to measure the fair value of the asset or liability shall not be adjusted for transaction costs.⁵ Transaction costs represent the incremental direct costs to sell the asset or transfer the liability in the principal (or most advantageous) market for the asset or liability.⁶ Transaction costs are not an attribute of the asset or liability; rather, they are specific to the transaction and will differ depending on how the reporting entity transacts. However, transaction costs do not include the costs that would be incurred to transport the asset or liability to (or from) its principal (or most advantageous) market. If location is an attribute of the asset or liability (as might be the case for a commodity), the price in the principal (or most advantageous) market used to measure the fair value of the asset or liability shall be adjusted for the costs, if any, that would be incurred to transport the asset or liability to (or from) its principal (or most advantageous) market.

Market participants

10. Market participants are buyers and sellers in the principal (or most advantageous) market for the asset or liability that are:

- a. Independent of the reporting entity; that is, they are not related parties⁷
- b. Knowledgeable, having a reasonable understanding about the asset or liability and the transaction

⁵Transaction costs should be accounted for in accordance with the provisions of other accounting pronouncements.

⁶Incremental direct costs to sell the asset or transfer the liability refer to those costs that result directly from and are essential to that transaction and that would not have been incurred by the reporting entity had the decision to sell the asset (or transfer the liability) not been made (similar to cost to sell, as defined in paragraph 35 of FASB Statement No. 144, *Accounting for the Impairment or Disposal of Long-Lived Assets*).

⁷This Statement uses the term *related parties* consistent with its use in FASB Statement No. 57, *Related Party Disclosures*.

based on all available information, including information that might be obtained through due diligence efforts that are usual and customary

- c. Able to transact for the asset or liability
- d. Willing to transact for the asset or liability; that is, they are motivated but not forced or otherwise compelled to do so.

11. The fair value of the asset or liability shall be determined based on the assumptions that market participants would use in pricing the asset or liability. In developing those assumptions, the reporting entity need not identify specific market participants. Rather, the reporting entity should identify characteristics that distinguish market participants generally, considering factors specific to (a) the asset or liability, (b) the principal (or most advantageous) market for the asset or liability, and (c) market participants with whom the reporting entity would transact in that market.

Application to assets

12. A fair value measurement assumes the highest and best use of the asset by market participants, considering the use of the asset that is physically possible, legally permissible, and financially feasible at the measurement date. In broad terms, highest and best use refers to the use of an asset by market participants that would maximize the value of the asset or the group of assets within which the asset would be used. Highest and best use is determined based on the use of the asset by market participants, even if the intended use of the asset by the reporting entity is different.

13. The highest and best use of the asset establishes the valuation premise used to measure the fair value of the asset. Specifically:

- a. *In-use.* The highest and best use of the asset is in-use if the asset would provide maximum value to market participants principally through its use in combination with other assets as a group (as installed or otherwise configured for use). For example, that might be the case for certain nonfinancial assets. If the highest and best use of the asset is in-use, the fair value of the asset shall be measured using an in-use valuation premise. When using an in-use valuation premise, the fair

value of the asset is determined based on the price that would be received in a current transaction to sell the asset assuming that the asset would be used with other assets as a group and that those assets would be available to market participants. Generally, assumptions about the highest and best use of the asset should be consistent for all of the assets of the group within which it would be used.

- b. *In-exchange.* The highest and best use of the asset is in-exchange if the asset would provide maximum value to market participants principally on a standalone basis. For example, that might be the case for a financial asset. If the highest and best use of the asset is in-exchange, the fair value of the asset shall be measured using an in-exchange valuation premise. When using an in-exchange valuation premise, the fair value of the asset is determined based on the price that would be received in a current transaction to sell the asset standalone.

14. Because the highest and best use of the asset is determined based on its use by market participants, the fair value measurement considers the assumptions that market participants would use in pricing the asset, whether using an in-use or an in-exchange valuation premise.⁸

Application to liabilities

15. A fair value measurement assumes that the liability is transferred to a market participant at the measurement date (the liability to the counterparty continues; it is not settled) and that the nonperformance risk relating to that liability is the same before and after its transfer. Nonperformance risk refers to the risk that the obligation will not be fulfilled and affects the value at which the liability is transferred. Therefore, the fair value of the liability shall reflect the nonperformance risk relating to that liability. Nonperformance risk includes but may not be limited to the reporting entity's own credit risk. The reporting entity shall consider the effect of its credit risk (credit standing) on the fair value of the liability in all periods in which the liability is measured at fair value. That effect may differ depending on the liability, for example, whether the liability is an obligation

⁸The fair value of an asset in use is determined based on the use of the asset together with other assets as a group (consistent with its highest and best use from the perspective of market participants), even if the asset that is the subject of the measurement is aggregated (or disaggregated) at a different level for purposes of applying other accounting pronouncements.

*Fair Value Measurements***FAS157**

to deliver cash (a financial liability) or an obligation to deliver goods or services (a nonfinancial liability), and the terms of credit enhancements related to the liability, if any.

Fair Value at Initial Recognition

16. When an asset is acquired or a liability is assumed in an exchange transaction for that asset or liability, the transaction price represents the price paid to acquire the asset or received to assume the liability (an entry price). In contrast, the fair value of the asset or liability represents the price that would be received to sell the asset or paid to transfer the liability (an exit price). Conceptually, entry prices and exit prices are different. Entities do not necessarily sell assets at the prices paid to acquire them. Similarly, entities do not necessarily transfer liabilities at the prices received to assume them.

17. In many cases, the transaction price will equal the exit price and, therefore, represent the fair value of the asset or liability at initial recognition. In determining whether a transaction price represents the fair value of the asset or liability at initial recognition, the reporting entity shall consider factors specific to the transaction and the asset or liability. For example, a transaction price might not represent the fair value of an asset or liability at initial recognition if:

- a. The transaction is between related parties.
- b. The transaction occurs under duress or the seller is forced to accept the price in the transaction. For example, that might be the case if the seller is experiencing financial difficulty.
- c. The unit of account represented by the transaction price is different from the unit of account for the asset or liability measured at fair value. For example, that might be the case if the asset or liability measured at fair value is only one of the elements in the transaction, the transaction includes unstated rights and privileges that should be separately measured, or the transaction price includes transaction costs.
- d. The market in which the transaction occurs is different from the market in which the reporting entity would sell the asset or transfer the liability, that is, the principal or most advantageous market. For example, those markets might be differ-

ent if the reporting entity is a securities dealer that transacts in different markets, depending on whether the counterparty is a retail customer (retail market) or another securities dealer (inter-dealer market).

Valuation Techniques

18. Valuation techniques consistent with the market approach, income approach, and/or cost approach shall be used to measure fair value. Key aspects of those approaches are summarized below:

- a. *Market approach.* The market approach uses prices and other relevant information generated by market transactions involving identical or comparable assets or liabilities (including a business). For example, valuation techniques consistent with the market approach often use market multiples derived from a set of comparables. Multiples might lie in ranges with a different multiple for each comparable. The selection of where within the range the appropriate multiple falls requires judgment, considering factors specific to the measurement (qualitative and quantitative). Valuation techniques consistent with the market approach include matrix pricing. Matrix pricing is a mathematical technique used principally to value debt securities without relying exclusively on quoted prices for the specific securities, but rather by relying on the securities' relationship to other benchmark quoted securities.
- b. *Income approach.* The income approach uses valuation techniques to convert future amounts (for example, cash flows or earnings) to a single present amount (discounted). The measurement is based on the value indicated by current market expectations about those future amounts. Those valuation techniques include present value techniques; option-pricing models, such as the Black-Scholes-Merton formula (a closed-form model) and a binomial model (a lattice model), which incorporate present value techniques;⁹ and the multiperiod excess earnings method, which is used to measure the fair value of certain intangible assets.¹⁰

⁹The guidance in this Statement does not apply for the fair value-based measurements using option-pricing models under Statement 123(R).

¹⁰The use of the multiperiod excess earnings method to measure the fair value of in-process research and development is discussed in AICPA Practice Aid, *Assets Acquired in a Business Combination to Be Used in Research and Development Activities: A Focus on Software, Electronic Devices, and Pharmaceutical Industries*.

- c. *Cost approach.* The cost approach is based on the amount that currently would be required to replace the service capacity of an asset (often referred to as current replacement cost). From the perspective of a market participant (seller), the price that would be received for the asset is determined based on the cost to a market participant (buyer) to acquire or construct a substitute asset of comparable utility, adjusted for obsolescence. Obsolescence encompasses physical deterioration, functional (technological) obsolescence, and economic (external) obsolescence and is broader than depreciation for financial reporting purposes (an allocation of historical cost) or tax purposes (based on specified service lives).

19. Valuation techniques that are appropriate in the circumstances and for which sufficient data are available shall be used to measure fair value. In some cases, a single valuation technique will be appropriate (for example, when valuing an asset or liability using quoted prices in an active market for identical assets or liabilities). In other cases, multiple valuation techniques will be appropriate (for example, as might be the case when valuing a reporting unit). If multiple valuation techniques are used to measure fair value, the results (respective indications of fair value) shall be evaluated and weighted, as appropriate, considering the reasonableness of the range indicated by those results. A fair value measurement is the point within that range that is most representative of fair value in the circumstances.

20. Valuation techniques used to measure fair value shall be consistently applied. However, a change in a valuation technique or its application (for example, a change in its weighting when multiple valuation techniques are used) is appropriate if the change results in a measurement that is equally or more representative of fair value in the circumstances. That might be the case if, for example, new markets develop, new information becomes available, information previously used is no longer available, or valuation techniques improve. Revisions resulting from a change in the valuation technique or its application shall be accounted for as a change in accounting estimate (FASB Statement No. 154, *Accounting Changes and Error Corrections*, paragraph 19). The disclosure provisions of Statement 154 for a change in accounting estimate are not required for revisions resulting from a change in a valuation technique or its application.

Inputs to Valuation Techniques

21. In this Statement, *inputs* refer broadly to the assumptions that market participants would use in pricing the asset or liability, including assumptions about risk, for example, the risk inherent in a particular valuation technique used to measure fair value (such as a pricing model) and/or the risk inherent in the inputs to the valuation technique. Inputs may be observable or unobservable:

- Observable inputs* are inputs that reflect the assumptions market participants would use in pricing the asset or liability developed based on market data obtained from sources independent of the reporting entity.
- Unobservable inputs* are inputs that reflect the reporting entity's own assumptions about the assumptions market participants would use in pricing the asset or liability developed based on the best information available in the circumstances.

Valuation techniques used to measure fair value shall maximize the use of observable inputs and minimize the use of unobservable inputs.

Fair Value Hierarchy

22. To increase consistency and comparability in fair value measurements and related disclosures, the fair value hierarchy prioritizes the inputs to valuation techniques used to measure fair value into three broad levels. The fair value hierarchy gives the highest priority to quoted prices (unadjusted) in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). In some cases, the inputs used to measure fair value might fall in different levels of the fair value hierarchy. The level in the fair value hierarchy within which the fair value measurement in its entirety falls shall be determined based on the lowest level input that is significant to the fair value measurement in its entirety. Assessing the significance of a particular input to the fair value measurement in its entirety requires judgment, considering factors specific to the asset or liability.

23. The availability of inputs relevant to the asset or liability and the relative reliability of the inputs might affect the selection of appropriate valuation techniques. However, the fair value hierarchy prioritizes the inputs to valuation techniques, not the valuation techniques. For example, a fair value measurement

using a present value technique might fall within Level 2 or Level 3, depending on the inputs that are significant to the measurement in its entirety and the level in the fair value hierarchy within which those inputs fall.

Level 1 inputs

24. Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date. An active market for the asset or liability is a market in which transactions for the asset or liability occur with sufficient frequency and volume to provide pricing information on an ongoing basis. A quoted price in an active market provides the most reliable evidence of fair value and shall be used to measure fair value whenever available, except as discussed in paragraphs 25 and 26.

25. If the reporting entity holds a large number of similar assets or liabilities (for example, debt securities) that are required to be measured at fair value, a quoted price in an active market might be available but not readily accessible for each of those assets or liabilities individually. In that case, fair value may be measured using an alternative pricing method that does not rely exclusively on quoted prices (for example, matrix pricing) as a practical expedient. However, the use of an alternative pricing method renders the fair value measurement a lower level measurement.

26. In some situations, a quoted price in an active market might not represent fair value at the measurement date. That might be the case if, for example, significant events (principal-to-principal transactions, brokered trades, or announcements) occur after the close of a market but before the measurement date. The reporting entity should establish and consistently apply a policy for identifying those events that might affect fair value measurements. However, if the quoted price is adjusted for new information, the adjustment renders the fair value measurement a lower level measurement.

27. If the reporting entity holds a position in a single financial instrument (including a block) and the instrument is traded in an active market, the fair value of the position shall be measured within Level 1 as the product of the quoted price for the individual instrument times the quantity held. The quoted price

shall not be adjusted because of the size of the position relative to trading volume (blockage factor). The use of a blockage factor is prohibited, even if a market's normal daily trading volume is not sufficient to absorb the quantity held and placing orders to sell the position in a single transaction might affect the quoted price.¹¹

Level 2 inputs

28. Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. If the asset or liability has a specified (contractual) term, a Level 2 input must be observable for substantially the full term of the asset or liability. Level 2 inputs include the following:

- a. Quoted prices for similar assets or liabilities in active markets
- b. Quoted prices for identical or similar assets or liabilities in markets that are not active, that is, markets in which there are few transactions for the asset or liability, the prices are not current, or price quotations vary substantially either over time or among market makers (for example, some brokered markets), or in which little information is released publicly (for example, a principal-to-principal market)
- c. Inputs other than quoted prices that are observable for the asset or liability (for example, interest rates and yield curves observable at commonly quoted intervals, volatilities, prepayment speeds, loss severities, credit risks, and default rates)
- d. Inputs that are derived principally from or corroborated by observable market data by correlation or other means (market-corroborated inputs).

29. Adjustments to Level 2 inputs will vary depending on factors specific to the asset or liability. Those factors include the condition and/or location of the asset or liability, the extent to which the inputs relate to items that are comparable to the asset or liability, and the volume and level of activity in the markets within which the inputs are observed. An adjustment that is significant to the fair value measurement in its entirety might render the measurement a Level 3 measurement, depending on the level in the fair value hierarchy within which the inputs used to determine the adjustment fall.

¹¹The guidance in this Statement applies for positions in financial instruments (including blocks) held by all entities, including broker-dealers and investment companies within the scope of the AICPAudit and Accounting Guides for those industries.

Level 3 inputs

30. Level 3 inputs are unobservable inputs for the asset or liability. Unobservable inputs shall be used to measure fair value to the extent that observable inputs are not available, thereby allowing for situations in which there is little, if any, market activity for the asset or liability at the measurement date. However, the fair value measurement objective remains the same, that is, an exit price from the perspective of a market participant that holds the asset or owes the liability. Therefore, unobservable inputs shall reflect the reporting entity's own assumptions about the assumptions that market participants would use in pricing the asset or liability (including assumptions about risk). Unobservable inputs shall be developed based on the best information available in the circumstances, which might include the reporting entity's own data. In developing unobservable inputs, the reporting entity need not undertake all possible efforts to obtain information about market participant assumptions. However, the reporting entity shall not ignore information about market participant assumptions that is reasonably available without undue cost and effort. Therefore, the reporting entity's own data used to develop unobservable inputs shall be adjusted if information is reasonably available without undue cost and effort that indicates that market participants would use different assumptions.

Inputs based on bid and ask prices

31. If an input used to measure fair value is based on bid and ask prices (for example, in a dealer market), the price within the bid-ask spread that is most representative of fair value in the circumstances shall be used to measure fair value, regardless of where in the fair value hierarchy the input falls (Level 1, 2, or 3). This Statement does not preclude the use of mid-market pricing or other pricing conventions as a practical expedient for fair value measurements within a bid-ask spread.

Disclosures

32. For assets and liabilities that are measured at fair value on a recurring basis in periods subsequent to initial recognition (for example, trading securities), the reporting entity shall disclose information that enables users of its financial statements to assess the inputs used to develop those measurements and for recurring fair value measurements using significant

unobservable inputs (Level 3), the effect of the measurements on earnings (or changes in net assets) for the period. To meet that objective, the reporting entity shall disclose the following information for each interim and annual period (except as otherwise specified) separately for each major category of assets and liabilities:

- a. The fair value measurements at the reporting date
- b. The level within the fair value hierarchy in which the fair value measurements in their entirety fall, segregating fair value measurements using quoted prices in active markets for identical assets or liabilities (Level 1), significant other observable inputs (Level 2), and significant unobservable inputs (Level 3)
- c. For fair value measurements using significant unobservable inputs (Level 3), a reconciliation of the beginning and ending balances, separately presenting changes during the period attributable to the following:¹²
 - (1) Total gains or losses for the period (realized and unrealized), segregating those gains or losses included in earnings (or changes in net assets), and a description of where those gains or losses included in earnings (or changes in net assets) are reported in the statement of income (or activities)
 - (2) Purchases, sales, issuances, and settlements (net)
 - (3) Transfers in and/or out of Level 3 (for example, transfers due to changes in the observability of significant inputs)
- d. The amount of the total gains or losses for the period in subparagraph (c)(1) above included in earnings (or changes in net assets) that are attributable to the change in unrealized gains or losses relating to those assets and liabilities still held at the reporting date and a description of where those unrealized gains or losses are reported in the statement of income (or activities)
- e. In annual periods only, the valuation technique(s) used to measure fair value and a discussion of changes in valuation techniques, if any, during the period.

33. For assets and liabilities that are measured at fair value on a nonrecurring basis in periods subsequent to initial recognition (for example, impaired assets), the reporting entity shall disclose information that enables users of its financial statements to assess the inputs used to develop those measurements. To meet

¹²For derivative assets and liabilities, the reconciliation disclosure required by paragraph 32(c) may be presented net.

that objective, the reporting entity shall disclose the following information for each interim and annual period (except as otherwise specified) separately for each major category of assets and liabilities:

- a. The fair value measurements recorded during the period and the reasons for the measurements
- b. The level within the fair value hierarchy in which the fair value measurements in their entirety fall, segregating fair value measurements using quoted prices in active markets for identical assets or liabilities (Level 1), significant other observable inputs (Level 2), and significant unobservable inputs (Level 3)
- c. For fair value measurements using significant unobservable inputs (Level 3), a description of the inputs and the information used to develop the inputs
- d. In annual periods only, the valuation technique(s) used to measure fair value and a discussion of changes, if any, in the valuation technique(s) used to measure similar assets and/or liabilities in prior periods.

34. The quantitative disclosures required by this Statement shall be presented using a tabular format. (See Appendix A.)

35. The reporting entity is encouraged, but not required, to combine the fair value information disclosed under this Statement with the fair value information disclosed under other accounting pronouncements (for example, FASB Statement No. 107, *Disclosures about Fair Value of Financial Instruments*) in the periods in which those disclosures are required, if practicable. The reporting entity also is encouraged, but not required, to disclose information about other similar measurements (for example, inventories measured at market value under ARB 43, Chapter 4), if practicable.

Effective Date and Transition

36. Except as provided in subparagraphs 36(a) and 36(b) below, this Statement shall be effective for financial statements issued for fiscal years beginning after November 15, 2007, and interim periods within those fiscal years. Earlier application is encouraged, provided that the reporting entity has not yet issued financial statements for that fiscal year, including any financial statements for an interim period within that fiscal year.

- a. Delayed application of this Statement is permitted for nonfinancial assets and nonfinancial li-

abilities, except for items that are recognized or disclosed at fair value in the financial statements on a recurring basis (at least annually), until fiscal years beginning after November 15, 2008, and interim periods within those fiscal years.

- b. An entity that has issued interim or annual financial statements reflecting the application of the measurement and disclosure provisions of this Statement prior to the issuance of FSP FAS 157-2, *Effective Date of FASB Statement No. 157*, must continue to apply all of the provisions of this Statement.

37. This Statement shall be applied prospectively as of the beginning of the fiscal year in which this Statement is initially applied, except as follows. This Statement shall be applied retrospectively to the following financial instruments as of the beginning of the fiscal year in which this Statement is initially applied (a limited form of retrospective application):

- a. A position in a financial instrument that trades in an active market held by a broker-dealer or investment company within the scope of the AICPA Audit and Accounting Guides for those industries that was measured at fair value using a blockage factor prior to initial application of this Statement
- b. A financial instrument that was measured at fair value at initial recognition under Statement 133 using the transaction price in accordance with the guidance in footnote 3 of EITF Issue No. 02-3, "Issues Involved in Accounting for Derivative Contracts Held for Trading Purposes and Contracts Involved in Energy Trading and Risk Management Activities," prior to initial application of this Statement
- c. A hybrid financial instrument that was measured at fair value at initial recognition under Statement 133 using the transaction price in accordance with the guidance in Statement 133 (added by FASB Statement No. 155, *Accounting for Certain Hybrid Financial Instruments*) prior to initial application of this Statement.

38. At the date this Statement is initially applied to the financial instruments in paragraph 37(a)-37(c), a difference between the carrying amounts and the fair values of those instruments shall be recognized as a cumulative-effect adjustment to the opening balance of retained earnings (or other appropriate components of equity or net assets in the statement of financial position) for that fiscal year, presented separately. The disclosure requirements of Statement 154 for a change in accounting principle do not apply.

39. The disclosure requirements of this Statement (paragraphs 32–35), including those disclosures that are required in annual periods only, shall be applied in the first interim period of the fiscal year in which

this Statement is initially applied. The disclosure requirements of this Statement need not be applied for financial statements for periods presented prior to initial application of this Statement.

The provisions of this Statement need not be applied to immaterial items.

This Statement was adopted by the unanimous vote of the seven members of the Financial Accounting Standards Board:

Robert H. Herz,
Chairman
George J. Batavick

G. Michael Crooch
Thomas J. Linsmeier
Leslie F. Seidman

Edward W. Trott
Donald M. Young

Appendix A

IMPLEMENTATION GUIDANCE

Introduction

A1. This appendix describes in general terms certain provisions of this Statement and provides examples that incorporate simplified assumptions to illustrate the application of those provisions. This Statement sets out a framework for measuring fair value, which refers to certain valuation concepts and practices. However, this Statement is not intended to establish valuation standards.

The Fair Value Measurement Approach

A2. This Statement clarifies fair value in terms of the price in an orderly transaction between market participants to sell an asset or transfer a liability in the principal (or most advantageous) market for the asset or liability. The transaction to sell the asset or transfer the liability is a hypothetical transaction at the measurement date, considered from the perspective of a market participant that holds the asset or owes the liability. Therefore, the objective of a fair value measurement is to determine the price that would be received to sell the asset or paid to transfer the liability at the measurement date (an exit price). Because that exit price objective applies for all assets and liabilities measured at fair value, any fair value measurement requires that the reporting entity determine:

- a. The particular asset or liability that is the subject of the measurement (consistent with its unit of account)

- b. For an asset, the valuation premise appropriate for the measurement (consistent with its highest and best use)
- c. The principal (or most advantageous) market for the asset or liability (for an asset, consistent with its highest and best use)
- d. The valuation technique(s) appropriate for the measurement, considering the availability of data with which to develop inputs that represent the assumptions that market participants would use in pricing the asset or liability and the level in the fair value hierarchy within which the inputs fall.

A3. The judgments applied in different valuation situations often will be different. The examples in this appendix illustrate, in qualitative terms, the judgments a reporting entity that measures assets and/or liabilities at fair value might apply in varying valuation situations.

The Valuation Premise

A4. The valuation premise used to measure the fair value of an asset depends on the highest and best use of the asset by market participants. If the asset would provide maximum value to market participants principally through its use in combination with other assets as a group (highest and best use is “in-use”), the asset would be measured using an in-use valuation premise. If the asset would provide maximum value to market participants principally on a standalone basis (highest and best use is “in-exchange”), the asset would be measured using an in-exchange valuation premise.

*Fair Value Measurements***FAS157**

A5. When measuring the fair value of an asset in-use, the in-use valuation premise can be incorporated in the measurement differently, depending on the circumstances. For example:

- a. The fair value of the asset might be the same whether using an in-use or an in-exchange valuation premise. For example, that might be the case if the asset is a business (such as a reporting unit) that market participants would continue to operate. In that case, the transaction would involve the business in its entirety. The use of the assets as a group in the context of an ongoing business would generate synergies that would be available to market participants (market participant synergies).
- b. The in-use valuation premise might be incorporated in the fair value of the asset through adjustments to the value of the asset in-exchange. For example, that might be the case if the asset is a machine and the fair value measurement is determined using an observed price for a similar machine (not installed or otherwise configured for use), adjusted for transportation and installation costs so that the fair value measurement reflects the current condition and location of the machine (installed and configured for use).
- c. The in-use valuation premise might be incorporated in the fair value of the asset through the market participant assumptions used to measure the fair value of the asset. For example, if the asset is work-in-process inventory that is unique and market participants would complete the inventory into finished goods, the fair value of the inventory would assume that any specialized machinery necessary to complete the inventory into finished goods would be available to market participants. In that case, market participants would have the specialized machinery in place or would acquire the specialized machinery in conjunction with the inventory.
- d. The in-use valuation premise might be incorporated in the fair value of the asset through the valuation technique used to measure the fair value of the asset. For example, that might be the case when using the multiperiod excess earnings method to measure the fair value of certain intangible assets because that valuation technique specifically considers the contribution of any

complementary assets in the group in which an intangible asset would be used.

- e. In more limited situations, the asset might be measured at an amount that approximates its fair value in-use when allocating the fair value of the asset group within which the asset is used to the individual assets of the group. For example, that might be the case if the valuation involves real property and the fair value of improved property (an asset group) is allocated to its component assets (such as land and improvements).

Highest and Best Use

A6. Highest and best use is a valuation concept that refers broadly to the use of an asset that would maximize the value of the asset or the group of assets in which the asset would be used by market participants. For some assets, in particular, nonfinancial assets, application of the highest-and-best-use concept could have a significant effect on the fair value measurement. Examples 1–3 illustrate the application of the highest-and-best-use concept in situations in which nonfinancial assets are newly acquired.

Example 1—asset group

A7. The reporting entity, a strategic buyer, acquires a group of assets (Assets A, B, and C) in a business combination. Asset C is billing software developed by the acquired entity for its own use in conjunction with Assets A and B (related assets). The reporting entity measures the fair value of each of the assets individually, consistent with the specified unit of account for the assets. The reporting entity determines that each asset would provide maximum value to market participants principally through its use in combination with other assets as a group (highest and best use is in-use).

A8. In this instance, the market in which the reporting entity would sell the assets is the market in which it initially acquired the assets (that is, the “entry” and “exit” markets from the perspective of the reporting entity are the same). Market participant buyers with whom the reporting entity would transact in that market have characteristics that are generally representative of both financial buyers and strategic buyers and include those buyers that initially bid for the assets.¹³

¹³While market participant buyers might be broadly classified as strategic and/or financial buyers, there often will be differences among the market participant buyers within each of those groups, reflecting, for example, different uses for an asset and different operating strategies.

As discussed below, differences between the indicated fair values of the individual assets relate principally to the use of the assets by those market participants within different asset groups:

- a. *Strategic buyer asset group.* The reporting entity, a strategic buyer, determines that strategic buyers have related assets that would enhance the value of the group within which the assets would be used (market participant synergies). Those assets include a substitute asset for Asset C (the billing software), which would be used for only a limited transition period and could not be sold standalone at the end of that period. Because strategic buyers have substitute assets, Asset C would not be used for its full remaining economic life. The indicated fair values of Assets A, B, and C within the strategic buyer asset group (reflecting the synergies resulting from the use of the assets within that group) are \$360, \$260, and \$30, respectively. The indicated fair value of the assets as a group within the strategic buyer asset group is \$650.
- b. *Financial buyer asset group.* The reporting entity determines that financial buyers do not have related or substitute assets that would enhance the value of the group within which the assets would be used. Because financial buyers do not have substitute assets, Asset C (the billing software) would be used for its full remaining economic life. The indicated fair values of Assets A, B, and C within the financial buyer asset group are \$300, \$200, and \$100, respectively. The indicated fair value of the assets as a group within the financial buyer asset group is \$600.

A9. The fair values of Assets A, B, and C would be determined based on the use of the assets as a group within the strategic buyer group (\$360, \$260, and \$30). Although the use of the assets within the strategic buyer group does not maximize the fair value of each of the assets individually, it maximizes the fair value of the assets as a group (\$650).

Example 2—land

A10. The reporting entity acquires land in a business combination. The land is currently developed for industrial use as a site for a manufacturing facility. The current use of land often is presumed to be its highest and best use. However, nearby sites have recently been developed for residential use as sites for high-

rise condominiums. Based on that development and recent zoning and other changes to facilitate that development, the reporting entity determines that the land currently used as a site for a manufacturing facility could be developed as a site for residential use (for high-rise condominiums).

A11. In this instance, the highest and best use of the land would be determined by comparing (a) the fair value of the manufacturing operation, which presumes that the land would continue to be used as currently developed for industrial use (in-use) and (b) the value of the land as a vacant site for residential use, considering the demolition and other costs necessary to convert the land to a vacant site (in-exchange). The highest and best use of the land would be determined based on the higher of those values.¹⁴

Example 3—IPR&D project

A12. The reporting entity acquires an in-process research and development (IPR&D) project in a business combination. The reporting entity does not intend to complete the IPR&D project. If completed, the IPR&D project would compete with one of its own IPR&D projects (to provide the next generation of the reporting entity's commercialized technology). Instead, the reporting entity intends to hold (lock up) the IPR&D project to prevent its competitors from obtaining access to the technology. The IPR&D project is expected to provide defensive value, principally by improving the prospects for the reporting entity's own competing technology. For purposes of measuring the fair value of the IPR&D project at initial recognition, the highest and best use of the IPR&D project would be determined based on its use by market participants. For example:

- a. The highest and best use of the IPR&D project would be in-use if market participants would continue to develop the IPR&D project and that use would maximize the value of the group of assets in which the IPR&D project would be used. That might be the case if market participants do not have similar technology (in development or commercialized). The fair value of the IPR&D project, measured using an in-use valuation premise, would be determined based on the price that would be received in a current transaction to sell the IPR&D project, assuming that the

¹⁴In situations involving real estate appraisal, the determination of highest and best use in the manner described above also might consider other factors relating to the manufacturing operation, including its assets and liabilities.

- IPR&D would be used with its complementary assets as a group and that those complementary assets would be available to market participants.
- b. The highest and best use of the IPR&D project also would be in-use if, for competitive reasons, market participants would lock up the IPR&D project and that use would maximize the value of the group of assets in which the IPR&D project would be used (as a locked-up project). That might be the case if market participants have technology in a more advanced stage of development that would compete with the IPR&D project (if completed) and the IPR&D project would be expected to provide defensive value (if locked up). The fair value of the IPR&D project, measured using an in-use valuation premise, would be determined based on the price that would be received in a current transaction to sell the IPR&D project, assuming that the IPR&D would be used (locked up) with its complementary assets as a group and that those complementary assets would be available to market participants.
- c. The highest and best use of the IPR&D project would be in-exchange if market participants would discontinue the development of the IPR&D project. That might be the case if the IPR&D project is not expected to provide a market rate of return (if completed) and would not otherwise provide defensive value (if locked up). The fair value of the IPR&D project, measured using an in-exchange valuation premise, would be determined based on the price that would be received in a current transaction to sell the IPR&D project standalone (which might be zero).

Valuation Techniques

A13. This Statement emphasizes that valuation techniques consistent with the market approach, income approach, and/or cost approach should be used to measure fair value. In some cases, a single valuation technique will be appropriate. In other cases, multiple valuation techniques will be appropriate. If multiple valuation techniques are used, the reporting entity should evaluate the results (respective indications of fair value), considering the reasonableness of the range indicated by those results. The fair value measurement is the point within that range that is most representative of fair value in the circumstances. Examples 4 and 5 illustrate the use of multiple valuation techniques.

Example 4—machine held and used

A14. The reporting entity tests for impairment an asset group that is held and used in operations. The asset group is impaired. The reporting entity measures the fair value of a machine that is used in the asset group as a basis for allocating the impairment loss to the assets of the group in accordance with FASB Statement No. 144, *Accounting for the Impairment or Disposal of Long-Lived Assets*. The machine, initially purchased from an outside vendor, was subsequently customized by the reporting entity for use in its operations. However, the customization of the machine was not extensive. The reporting entity determines that the asset would provide maximum value to market participants through its use in combination with other assets as a group (as installed or otherwise configured for use). Therefore, the highest and best use of the machine is in-use.

A15. The reporting entity determines that sufficient data are available to apply the cost approach and, because the customization of the machine was not extensive, the market approach. The income approach is not used because the machine does not have a separately identifiable income stream from which to develop reliable estimates of future cash flows. Further, information about short-term and intermediate-term lease rates for similar used machinery that otherwise could be used to project an income stream (lease payments over remaining service lives) is not available. The market and cost approaches are applied as follows:

- a. *Market approach.* The market approach is applied using quoted prices for similar machines adjusted for differences between the machine (as customized) and the similar machines. The measurement reflects the price that would be received for the machine in its current condition (used) and location (installed and configured for use), thereby including installation and transportation costs. The fair value indicated by that approach ranges from \$40,000 to \$48,000.
- b. *Cost approach.* The cost approach is applied by estimating the amount that currently would be required to construct a substitute (customized) machine of comparable utility. The estimate considers the condition of the machine (for example, physical deterioration, functional obsolescence, and economic obsolescence) and includes installation costs. The fair value indicated by that approach ranges from \$40,000 to \$52,000.

A16. The reporting entity determines that the fair value indicated by the market approach is more representative of fair value than the fair value indicated by the cost approach and, therefore, ascribes more weight to the results of the market approach. That determination is based on the relative reliability of the inputs, considering the degree of comparability between the machine and the similar machines. In particular:

- a. The inputs used in the market approach (quoted prices for similar machines) require relatively fewer and less subjective adjustments than the inputs used in the cost approach.
- b. The range indicated by the market approach overlaps with, but is narrower than, the range indicated by the cost approach.
- c. There are no known unexplained differences (between the machine and the similar machines) within that range.

The reporting entity further determines that the higher end of the range indicated by the market approach is most representative of fair value, largely because the majority of relevant data points in the market approach fall at or near the higher end of the range. Accordingly, the reporting entity determines that the fair value of the machine is \$48,000.

Example 5—software asset

A17. The reporting entity acquires a group of assets. The asset group includes an income-producing software asset internally developed for license to customers and its complementary assets (including a related database with which the software asset is used). For purposes of allocating the cost of the group to the individual assets acquired, the reporting entity measures the fair value of the software asset. The reporting entity determines that the software asset would provide maximum value to market participants through its use in combination with other assets (its complementary assets) as a group. Therefore, the highest and best use of the software asset is in-use. (In this instance, the licensing of the software asset, in and of itself, does not render the highest and best use of the software asset in-exchange.)

A18. The reporting entity determines that in addition to the income approach, sufficient data might be available to apply the cost approach but not the market approach. Information about market transactions for comparable software assets is not available. The income and cost approaches are applied as follows:

- a. *Income approach.* The income approach is applied using a present value technique. The cash flows used in that technique reflect the income stream expected to result from the software asset (license fees from customers) over its economic life. The fair value indicated by that approach is \$15 million.
- b. *Cost approach.* The cost approach is applied by estimating the amount that currently would be required to construct a substitute software asset of comparable utility (considering functional, technological, and economic obsolescence). The fair value indicated by that approach is \$10 million.

A19. Through its application of the cost approach, the reporting entity determines that market participants would not be able to replicate a substitute software asset of comparable utility. Certain attributes of the software asset are unique, having been developed using proprietary information, and cannot be readily replicated. The reporting entity determines that the fair value of the software asset is \$15 million, as indicated by the income approach.

Inputs to Valuation Techniques

A20. This Statement emphasizes that valuation techniques used to measure the fair value of an asset or liability should maximize the use of observable inputs, that is, inputs that reflect the assumptions market participants would use in pricing the asset or liability developed based on market data obtained from sources independent of the reporting entity. Examples of markets in which inputs might be observable for some assets and liabilities (for example, financial instruments) include the following:

- a. *Exchange market.* In an active exchange market, closing prices are both readily available and generally representative of fair value. An example of such a market is the New York Stock Exchange.
- b. *Dealer market.* In a dealer market, dealers stand ready to trade (either buy or sell for their own account), thereby providing liquidity by using their capital to hold an inventory of the items for which they make a market. Typically, bid and ask prices (representing the price the dealer is willing to pay and the price at which the dealer is willing to sell, respectively) are more readily available than closing prices. Over-the-counter markets (where prices are publicly reported by the National Association of Securities Dealers Automated Quotations systems or by Pink Sheets LLC) are dealer markets. For example, the market for U.S. Treasury securities is a dealer market.

Dealer markets also exist for some other assets and liabilities, including other financial instruments, commodities, and physical assets (for example, certain used equipment).

- c. *Brokered market.* In a brokered market, brokers attempt to match buyers with sellers but do not stand ready to trade for their own account. In other words, brokers do not use their own capital to hold an inventory of the items for which they make a market. The broker knows the prices bid and asked by the respective parties, but each party is typically unaware of another party's price requirements. Prices of completed transactions are sometimes available. Brokered markets include electronic communication networks, in which buy and sell orders are matched, and commercial and residential real estate markets.
- d. *Principal-to-principal market.* Principal-to-principal transactions, both originations and re-sales, are negotiated independently with no intermediary. Little information about those transactions may be released publicly.

Fair Value Hierarchy

A21. To increase consistency and comparability in fair value measurements and related disclosures, this Statement establishes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into three broad levels. The level in the fair value hierarchy within which the fair value measurement in its entirety falls is determined based on the lowest level input that is significant to the measurement in its entirety.

Level 1 inputs

A22. Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date. A Level 1 input will be available for many financial assets and liabilities, some of which might be exchanged in multiple active markets (for example, on different exchanges). Therefore, the emphasis within Level 1 is on determining both of the following:

- a. The principal market for the asset or liability or, in the absence of a principal market, the most advantageous market for the asset or liability, considered from the perspective of the reporting entity; and
- b. Whether the reporting entity has the ability to access the price in that market for the asset or liability at the measurement date.

Example 6 illustrates the use of Level 1 inputs to measure the fair value of a financial asset that trades in multiple active markets with different prices.

Example 6—Level 1 principal (or most advantageous) market

A23. A financial asset is traded on two different exchanges with different prices. The reporting entity transacts in both markets and has the ability to access the price in those markets for the asset at the measurement date. In Market A, the price that would be received is \$26, and transaction costs in that market are \$3 (the net amount that would be received is \$23). In Market B, the price that would be received is \$25, and transaction costs in that market are \$1 (the net amount that would be received in Market B is \$24).

- a. If Market A is the principal market for the asset (the market in which the reporting entity would sell the asset with the greatest volume and level of activity for the asset), the fair value of the asset would be measured using the price that would be received in that market (\$26).
- b. If neither market is the principal market for the asset, the fair value of the asset would be measured using the price in the most advantageous market. The most advantageous market is the market in which the reporting entity would sell the asset with the price that maximizes the amount that would be received for the asset, considering transaction costs in the respective markets (that is, the net amount that would be received in the respective markets). Because the price in Market B adjusted for transaction costs would maximize the net amount that would be received for the asset (\$24), the fair value of the asset would be measured using the price in that market (\$25). Although transaction costs are considered in determining the most advantageous market, the price in that market used to measure the fair value of the asset is not adjusted for those costs.

Level 2 inputs

A24. Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly through corroboration with observable market data (market-corroborated inputs). If the asset or liability has a specified (contractual) term, a Level 2 input must be observable for substantially the full term of the asset or liability. An adjustment to a Level 2 input

that is significant to the fair value measurement in its entirety might render the measurement a Level 3 measurement, depending on the level in the fair value hierarchy within which the inputs used to determine the adjustment fall. Examples of Level 2 inputs for particular assets and liabilities follow.

- a. *Receive-fixed, pay-variable interest rate swap based on the LIBOR swap rate.* A Level 2 input would include the LIBOR swap rate if that rate is observable at commonly quoted intervals for the full term of the swap.
- b. *Receive-fixed, pay-variable interest rate swap based on a foreign-denominated yield curve.* A Level 2 input would include the swap rate based on a foreign-denominated yield curve that is observable at commonly quoted intervals for substantially the full term of the swap. That would be the case if the term of the swap is 10 years and that rate is observable at commonly quoted intervals for 9 years, provided that any reasonable extrapolation of the yield curve for year 10 would not be significant to the fair value measurement of the swap in its entirety.
- c. *Receive-fixed, pay-variable interest rate swap based on a specific bank's prime rate.* A Level 2 input would include the bank's prime rate derived through extrapolation if the extrapolated values are corroborated by observable market data, for example, by correlation with an interest rate that is observable over substantially the full term of the swap.
- d. *Three-year option on exchange-traded shares.* A Level 2 input would include the implied volatility for the shares derived through extrapolation to year 3 if (1) prices for one- and two-year options on the shares are observable and (2) the extrapolated implied volatility of a three-year option is corroborated by observable market data for substantially the full term of the option. In that case, the implied volatility could be derived by extrapolating from the implied volatility of the one- and two-year options on the shares and corroborated by the implied volatility for three-year options on comparable entities' shares, provided that correlation with the one- and two-year implied volatilities is established.
- e. *Licensing arrangement.* For a licensing arrangement that is acquired in a business combination and that was recently negotiated with an un-

related party by the acquired entity (the party to the licensing arrangement), a Level 2 input would include the royalty rate at inception of the arrangement.

- f. *Finished goods inventory at retail outlet.* For finished goods inventory that is acquired in a business combination, a Level 2 input would include either a price to customers in a retail market or a wholesale price to retailers in a wholesale market, adjusted for differences between the condition and location of the inventory item and the comparable (similar) inventory items so that the fair value measurement reflects the price that would be received in a transaction to sell the inventory to another retailer that would complete the requisite selling efforts. Conceptually, the fair value measurement should be the same, whether adjustments are made to a retail price (downward) or to a wholesale price (upward). Generally, the price that requires the least amount of subjective adjustments should be used for the fair value measurement.
- g. *Building held and used.* A Level 2 input would include the price per square foot for the building (a valuation multiple) derived from observable market data, for example, multiples derived from prices in observed transactions involving comparable (similar) buildings in similar locations.
- h. *Reporting unit.* A Level 2 input would include a valuation multiple (for example, a multiple of earnings or revenue or a similar performance measure) derived from observable market data, for example, multiples derived from prices in observed transactions involving comparable (similar) businesses, considering operational, market, financial, and nonfinancial factors.

Level 3 inputs

A25. Level 3 inputs are unobservable inputs for the asset or liability, that is, inputs that reflect the reporting entity's own assumptions about the assumptions market participants would use in pricing the asset or liability (including assumptions about risk) developed based on the best information available in the circumstances. Assumptions about risk include the risk inherent in a particular valuation technique used to measure fair value (such as a pricing model)

and/or the risk inherent in the inputs to the valuation technique.¹⁵ Examples of Level 3 inputs for particular assets and liabilities follow.

- a. *Long-dated currency swap.* A Level 3 input would include interest rates in a specified currency that are not observable and cannot be corroborated by observable market data at commonly quoted intervals or otherwise for substantially the full term of the currency swap. The interest rates in a currency swap are the swap rates calculated from the respective countries' yield curves.
- b. *Three-year option on exchange-traded shares.* A Level 3 input would include historical volatility, that is, the volatility for the shares derived from the shares' historical prices. Historical volatility typically does not represent current market participant expectations about future volatility, even if it is the only information available to price an option.
- c. *Interest rate swap.* A Level 3 input would include an adjustment to a mid-market consensus (non-binding) price for the swap developed using data that are not directly observable and that cannot otherwise be corroborated by observable market data.
- d. *Asset retirement obligation at initial recognition.* A Level 3 input would include expected cash flows (adjusted for risk) developed using the reporting entity's own data if there is no information reasonably available without undue cost and effort that indicates that market participants would use different assumptions. That Level 3 input would be used in a present value technique together with other inputs, for example (1) a risk-free interest rate or (2) a credit-adjusted risk-free rate if the effect of the reporting entity's credit standing on the fair value of the liability is reflected in the discount rate rather than in the expected cash flows.¹⁶
- e. *Reporting unit.* A Level 3 input would include a financial forecast (for example, of cash flows or earnings) developed using the reporting entity's

own data if there is no information reasonably available without undue cost and effort that indicates that market participants would use different assumptions.

Transaction Prices and Initial Fair Value Measurements

A26. This Statement clarifies that in many cases the transaction price, that is, the price paid (received) for a particular asset (liability), will represent the fair value of that asset (liability) at initial recognition, but not presumptively.¹⁷ Example 7 illustrates situations in which the price in a transaction involving a derivative instrument might (and might not) represent the fair value of the instrument.

Example 7—interest rate swap at initial recognition

A27. Entity A (a retail counterparty) enters into an interest rate swap in a retail market with Entity B (a securities dealer) for no initial consideration (transaction price is zero). Entity A transacts only in the retail market. Entity B transacts in the retail market (with retail counterparties) and in the inter-dealer market (with securities dealer counterparties).

- a. *Entity A (retail counterparty).* From the perspective of Entity A, the retail market in which it initially transacted is the principal market for the swap; if Entity A were to transfer its rights and obligations under the swap, it would do so with a securities dealer counterparty in that market. In that case, the transaction price (zero) would represent the fair value of the swap to Entity A at initial recognition, that is, the price that Entity A would receive (or pay) to sell (or transfer) the swap in a transaction with a securities dealer counterparty in the retail market (an exit price).¹⁸ That price would not be adjusted for any incremental (transaction) costs that would be charged by that securities dealer counterparty.

¹⁵A measurement (for example, a "mark-to-model" measurement) that does not include an adjustment for risk would not represent a fair value measurement if market participants would include one in pricing the related asset or liability.

¹⁶FASB Statement No. 143, *Accounting for Asset Retirement Obligations*, illustrates the application of the expected present value technique to an asset retirement obligation measured at fair value at initial recognition under that Statement. (See Appendix C of Statement 143.)

¹⁷The guidance in this Statement applies for derivatives and other financial instruments that are measured at fair value under FASB Statement No. 133, *Accounting for Derivative Instruments and Hedging Activities*, including hybrid financial instruments. Therefore, this Statement nullifies the guidance in footnote 3 of EITF Issue No. 02-3, "Issues Involved in Accounting for Derivative Contracts Held for Trading Purposes and Contracts Involved in Energy Trading and Risk Management Activities."

¹⁸If the transaction price represents fair value at initial recognition and a pricing model will be used to measure fair value in subsequent periods, the model should be calibrated so that the model value at initial recognition equals the transaction price.

- b. *Entity B (securities dealer).* From the perspective of Entity B, the inter-dealer market (not the retail market in which it initially transacted) is the principal market for the swap; if Entity B were to transfer its rights and obligations under the swap, it would do so with a securities dealer in that market. Because the market in which Entity B initially transacted is different from the principal market for the swap, the transaction price (zero) would not necessarily represent the fair value of the swap to Entity B at initial recognition.

Restricted Assets

A28. The effect on a fair value measurement of a restriction on the sale or use of an asset by a reporting entity will differ depending on whether the restriction would be considered by market participants in pricing the asset. Examples 8 and 9 illustrate the effect of restrictions in determining the fair value of an asset.

Example 8—restriction on sale of security

A29. The reporting entity holds a security of an issuer for which sale is legally restricted for a specified period. (For example, such a restriction could limit sale to qualifying investors, as may be the case under Rule 144 or similar rules of the Securities and Exchange Commission.) The restriction is specific to (an attribute of) the security and, therefore, would transfer to market participants. In that case, the fair value of the security would be based on the quoted price for an otherwise identical unrestricted security of the same issuer that trades in a public market, adjusted to reflect the effect of the restriction. The adjustment would reflect the amount market participants would demand because of the risk relating to the inability to access a public market for the security for the specified period.¹⁹ The adjustment will vary depending on the nature and duration of the restriction, the extent to which buyers are limited by the restriction (for example, there might be a large number of qualifying investors), and factors specific to both the security and the issuer (qualitative and quantitative).²⁰

Example 9—restrictions on use of asset

A30. A donor contributes land in an otherwise developed residential area to a not-for-profit neighborhood association (Association). The land is currently used as a playground. The donor specifies that the land must continue to be used by the Association as a playground in perpetuity. Upon review of relevant documentation (legal and other), the Association determines that the fiduciary responsibility to meet the donor's restriction would not otherwise transfer to market participants if the asset was to be sold by the Association, that is, the donor restriction on the use of the land is specific to the Association. Absent the restriction on the use of the land by the Association, the land could be used as a site for residential development. In addition, the land has an easement for utility lines on a portion of the property.

- a. *Donor restriction on use of land.* Because in this instance the donor restriction on the use of the land is specific to the Association, the restriction would not transfer to market participants. Therefore, the fair value of the land would be based on the higher of its fair value in-use as a playground or fair value in-exchange as a site for residential development, regardless of the restriction on the use of the land by the Association.²¹
- b. *Easement for utility lines.* Because the easement for utility lines is specific to (an attribute of) the land, it would transfer to market participants. Therefore, the fair value measurement of the land would consider the effect of the easement, regardless of whether highest and best use is in-use as a playground or in-exchange as a site for residential development.

Liabilities and Credit Risk

A31. Nonperformance risk relating to a liability includes the reporting entity's credit risk. The reporting entity should consider the effect of its credit risk (credit standing) on the fair value of the liability in all periods in which the liability is measured at fair value because those who might hold the entity's obligations as assets would consider the effect of the entity's

¹⁹The guidance in this Statement applies for equity securities with restrictions that terminate within one year that are measured at fair value under FASB Statements No. 115, *Accounting for Certain Investments in Debt and Equity Securities*, and No. 124, *Accounting for Certain Investments Held by Not-for-Profit Organizations*.

²⁰ASR No. 113, *Statement Regarding "Restricted Securities,"* provides related guidance.

²¹The donor restriction, which is legally binding on the Association, would be indicated through classification of the associated net assets (permanently restricted) and disclosure of the nature of the restriction in accordance with paragraphs 12 and 14 of FASB Statement No. 117, *Financial Statements of Not-for-Profit Organizations*.

credit standing in determining the prices they would be willing to pay. For example, assume that Entity X and Entity Y each enter into a contractual obligation to pay cash (\$500) to Entity Z in 5 years. Entity X has a AA credit rating and can borrow at 6 percent, while Entity Y has a BBB credit rating and can borrow at 12 percent. Entity X will receive about \$374 in exchange for its promise (the present value of \$500 in 5 years at 6 percent). Entity Y will receive about \$284 in exchange for its promise (the present value of \$500 in 5 years at 12 percent). The fair value of the liability to each entity (the proceeds) incorporates that entity's credit standing. Example 10 illustrates the effect of credit standing on the fair value of a financial liability at initial recognition and in subsequent periods.

Example 10—structured note

A32. On January 1, 2007, Entity A, an investment bank with a AA credit rating, issues a five-year fixed rate note to Entity B. The contractual principal amount to be paid by Entity A at maturity is linked to the S&P 500 index. No credit enhancements are issued in conjunction with or otherwise related to the contract (that is, no collateral is posted and there is no third-party guarantee). Entity A elects to account for the entire note at fair value in accordance with FASB Statement No. 155, *Accounting for Certain Hybrid Financial Instruments*. The fair value of the note (the obligation of Entity A) during 2007 is measured using an expected present value technique. Changes in fair value are discussed below.

- a. *Fair value at January 1, 2007.* The expected cash flows used in the expected present value technique are discounted at the risk-free rate (using the treasury yield curve at January 1, 2007), plus the current market observable AA corporate bond spread to treasuries adjusted (up or down) for Entity A's specific credit risk (credit-adjusted risk-free rate). Therefore, the fair value of the obligation of Entity A at initial recognition considers nonperformance risk, including that entity's credit risk (presumably, reflected in the proceeds).
- b. *Fair value at March 31, 2007.* During March 2007, the credit spread for AA corporate bonds

widens, with no changes to the specific credit risk of Entity A. The expected cash flows used in the expected present value technique are discounted at the risk-free rate (using the treasury yield curve at March 31, 2007), plus the current market observable AA corporate bond spread to treasuries, adjusted for Entity A's specific credit risk (credit-adjusted risk-free rate). Entity A's specific credit risk is unchanged from initial recognition. Therefore, the fair value of the obligation of Entity A changes due to changes in credit spreads generally. Changes in credit spreads reflect current market participant assumptions about changes in nonperformance risk generally.

- c. *Fair value at June 30, 2007.* As of June 30, 2007, there have been no changes to the AA corporate bond spreads. However, based on structured note issuances corroborated with other qualitative information, Entity A determines that its own specific credit worthiness has strengthened within the AA credit spread. The expected cash flows used in the expected present value technique are discounted at the risk-free rate (using the treasury yield curve at June 30, 2007), plus the current market observable AA corporate bond spread to treasuries (unchanged from March 31, 2007), adjusted for Entity A's specific credit risk (credit-adjusted risk-free rate). Therefore, the fair value of the obligation of Entity A changes due to the change in its own specific credit risk within the AA corporate bond spread.

Fair Value Disclosures

A33. This Statement requires disclosures about the fair value of assets and liabilities recognized in the statement of financial position in periods subsequent to initial recognition, whether the measurements are made on a recurring basis (for example, trading securities) or on a nonrecurring basis (for example, impaired assets). Quantitative disclosures using a tabular format are required in all periods (interim and annual). Qualitative (narrative) disclosures about the valuation techniques used to measure fair value are required in all annual periods. The disclosures required by paragraph 32(a)–(d) and paragraph 33(a) and (b) are illustrated below.

Assets Measured at Fair Value on a Recurring Basis

A34. For assets and liabilities measured at fair value on a recurring basis during the period, this Statement requires quantitative disclosures about the fair value measurements separately for each major category of assets and liabilities (paragraph 32(a) and (b)). For assets, that information might be presented as follows:

(\$ in 000s)

Description	12/31/XX	Fair Value Measurements at Reporting Date Using		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Trading securities	\$115	\$105	\$10	
Available-for-sale securities	75	75		
Derivatives	60	25	15	\$20
Venture capital investments	10			10
Total	<u>\$260</u>	<u>\$205</u>	<u>\$25</u>	<u>\$30</u>

(Note: For liabilities, a similar table should be presented.)

*Fair Value Measurements***FAS157***Assets Measured at Fair Value on a Recurring Basis Using Significant Unobservable Inputs (Level 3)*

A35. For assets and liabilities measured at fair value on a recurring basis using significant unobservable inputs (Level 3) during the period, this Statement requires a reconciliation of the beginning and ending balances, separately for each major category of assets and liabilities, except for derivative assets and liabilities, which may be presented net (paragraph 32(c) and (d)). For assets, the reconciliation might be presented as follows:

(\$ in 000s)	Fair Value Measurements Using Significant Unobservable Inputs (Level 3)		
	Derivatives	Venture Capital Investments	Total
Beginning balance	\$14	\$11	\$25
Total gains or losses (realized/unrealized)			
Included in earnings (or changes in net assets)	11	(3)	8
Included in other comprehensive income	4		4
Purchases, issuances, and settlements	(7)	2	(5)
Transfers in and/or out of Level 3	(2)	0	(2)
Ending balance	<u>\$20</u>	<u>\$10</u>	<u>\$30</u>
The amount of total gains or losses for the period included in earnings (or changes in net assets) attributable to the change in unrealized gains or losses relating to assets still held at the reporting date	<u>\$ 7</u>	<u>\$ 2</u>	<u>\$ 9</u>

(Note: For liabilities, a similar table should be presented.)

Gains and losses (realized and unrealized) included in earnings (or changes in net assets) for the period (above) are reported in trading revenues and in other revenues as follows:

	Trading Revenues	Other Revenues
Total gains or losses included in earnings (or changes in net assets) for the period (above)	<u>\$11</u>	<u>\$(3)</u>
Change in unrealized gains or losses relating to assets still held at reporting date	<u>\$ 7</u>	<u>\$ 2</u>

Assets Measured at Fair Value on a Nonrecurring Basis

A36. For each major category of assets and liabilities measured at fair value on a nonrecurring basis

during the period, this Statement requires disclosures about the fair value measurements (paragraph 33(a) and (b)). That information might be presented as follows:

(\$ in millions)

Description	Year Ended 12/31/XX	Fair Value Measurements Using			
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total Gains (Losses)
Long-lived assets held and used	\$75		\$75		\$(25)
Goodwill	30			\$30	(35)
Long-lived assets held for sale	26		26		(15)
					<u>\$(75)</u>

In accordance with the provisions of Statement 144, long-lived assets held and used with a carrying amount of \$100 million were written down to their fair value of \$75 million, resulting in an impairment charge of \$25 million, which was included in earnings for the period.

In accordance with the provisions of Statement 142, goodwill with a carrying amount of \$65 million was written down to its implied fair value of \$30 million, resulting in an impairment charge of \$35 million, which was included in earnings for the period.

In accordance with the provisions of Statement 144, long-lived assets held for sale with a carrying amount of \$35 million were written down to their fair value of \$26 million, less cost to sell of \$6 million (or \$20 million), resulting in a loss of \$15 million, which was included in earnings for the period.

Appendix B**PRESENT VALUE TECHNIQUES****Introduction**

B1. FASB Concepts Statement No. 7, *Using Cash Flow Information and Present Value in Accounting Measurements*, provides guidance for using present value techniques to measure fair value. That guid-

ance focuses on a traditional or discount rate adjustment technique and an expected cash flow (expected present value) technique. This appendix clarifies that guidance.²² This appendix neither prescribes the use of one specific present value technique nor limits the use of present value techniques to measure fair value to the techniques discussed herein. The present value technique used to measure fair value will depend on facts and circumstances specific to the asset or liability being measured (for example, whether comparable assets or liabilities can be observed in the market) and the availability of sufficient data.

The Components of a Present Value Measurement

B2. Present value is a tool used to link uncertain future amounts (cash flows or values) to a present amount using a discount rate (an application of the income approach) that is consistent with value maximizing behavior and capital market equilibrium. A fair value measurement of an asset or liability, using present value, should capture the following elements from the perspective of market participants as of the measurement date:

- An estimate of future cash flows for the asset or liability being measured.
- Expectations about possible variations in the amount and/or timing of the cash flows representing the uncertainty inherent in the cash flows.

²²That guidance is included or otherwise referred to principally in paragraphs 39–46, 51, 62–71, 114, and 115 of Concepts Statement 7.

- c. The time value of money, represented by the rate on risk-free monetary assets that have maturity dates or durations that coincide with the period covered by the cash flows (risk-free interest rate). For present value computations denominated in nominal U.S. dollars, the yield curve for U.S. Treasury securities determines the appropriate risk-free interest rate. U.S. Treasury securities are deemed (default) risk free because they pose neither uncertainty in timing nor risk of default to the holder.
 - d. The price for bearing the uncertainty inherent in the cash flows (risk premium).
 - e. Other case-specific factors that would be considered by market participants.
 - f. In the case of a liability, the nonperformance risk relating to that liability, including the reporting entity's (obligor's) own credit risk.
- e. Discount rates should be consistent with the underlying economic factors of the currency in which the cash flows are denominated.

Risk and Uncertainty

B4. A fair value measurement, using present value, is made under conditions of uncertainty because the cash flows used are estimates rather than known amounts. In many cases, both the amount and timing of the cash flows will be uncertain. Even contractually fixed amounts, like the payments on a loan, will be uncertain if there is risk of default.

B5. Risk-averse market participants generally seek compensation for bearing the uncertainty inherent in the cash flows of an asset or liability (risk premium). A fair value measurement should include a risk premium reflecting the amount market participants would demand because of the risk (uncertainty) in the cash flows. Otherwise, the measurement would not faithfully represent fair value. In some cases, determining the appropriate risk premium might be difficult. However, the degree of difficulty alone is not a sufficient basis on which to exclude a risk adjustment.

B6. Present value techniques differ in how they adjust for risk and in the type of cash flows they use. For example, the discount rate adjustment technique uses a risk-adjusted discount rate and contractual, promised, or most likely cash flows; Method 1 of the expected present value technique uses a risk-free rate and risk-adjusted expected cash flows; and Method 2 of the expected present value technique uses a risk-adjusted discount rate (which is different from the rate used in the discount rate adjustment technique) and expected cash flows. Those present value techniques are discussed below.

Discount Rate Adjustment Technique

B7. The discount rate adjustment technique uses a single set of cash flows from the range of possible estimated amounts, whether contractual or promised (as is the case for a bond) or most likely cash flows. In all cases, those cash flows are conditional upon the

General Principles

B3. Present value techniques differ in how they capture those elements. However, certain general principles govern the application of any present value technique:

- a. Cash flows and discount rates should reflect assumptions that market participants would use in pricing the asset or liability.
- b. Cash flows and discount rates should consider only factors attributed to the asset (or liability) being measured.
- c. To avoid double counting or omitting the effects of risk factors, discount rates should reflect assumptions that are consistent with those inherent in the cash flows.²³
- d. Assumptions about cash flows and discount rates should be internally consistent. For example, nominal cash flows (that include the effect of inflation) should be discounted at a rate that includes the effect of inflation. The nominal risk-free interest rate includes the effect of inflation. Real cash flows (that exclude the effect of inflation) should be discounted at a rate that excludes the effect of inflation. Similarly, after-tax cash flows should be discounted using an after-tax discount rate. Pretax cash flows should be discounted at a rate consistent with those cash flows (for example, a U.S. Treasury rate is quoted on a

²³For example, a discount rate that reflects expectations about future defaults is appropriate if using contractual cash flows of a loan (discount rate adjustment technique). That same rate would not be used if using expected (probability-weighted) cash flows (expected present value technique) because the expected cash flows already reflect assumptions about future defaults; instead, a discount rate that is commensurate with the risk inherent in the expected cash flows should be used.

occurrence of specified events (for example, contractual or promised cash flows for a bond are conditional on the event of no default by the debtor). The discount rate used in the discount rate adjustment technique is derived from observed rates of return for comparable assets or liabilities that are traded in the market. Accordingly, the contractual, promised, or most likely cash flows are discounted at a rate that corresponds to an observed market rate associated with such conditional cash flows (market rate of return).

B8. The application of the discount rate adjustment technique requires an analysis of market data for comparable assets or liabilities. Comparability is established by considering the nature of the cash flows (for example, whether the cash flows are contractual or noncontractual and are likely to respond similarly to changes in economic conditions), as well as other factors (for example, credit standing, collateral, duration, restrictive covenants, and liquidity). Alternatively, if a single comparable asset or liability does not fairly reflect the risk inherent in the cash flows of the asset or liability being measured, it may be possible to derive a discount rate using data for several comparable assets or liabilities in conjunction with the risk-free yield curve (a "build-up" approach).

B9. To illustrate a build-up approach, assume that Asset A is a contractual right to receive \$800 in 1 year (no timing uncertainty). There is an established market for comparable assets, and information about those assets, including price information, is available. Of those comparable assets:

- a. Asset B is a contractual right to receive \$1,200 in 1 year and has a market price of \$1,083. Thus, the implied annual rate of return (1-year market rate of return) is 10.8 percent $\{(\$1,200/\$1,083) - 1\}$.
- b. Asset C is a contractual right to receive \$700 in 2 years and has a market price of \$566. Thus, the implied annual rate of return (2-year market rate of return) is 11.2 percent $\{(\$700/\$566)^{0.5} - 1\}$.
- c. All three assets are comparable with respect to risk (dispersion of possible payoffs and credit).

B10. Based on the timing of the contractual payments to be received relative to Asset A (one year for Asset B versus two years for Asset C), Asset B is deemed more comparable to Asset A. Using the contractual payment to be received for Asset A (\$800) and the 1-year market rate derived from Asset B (10.8 percent), the fair value of Asset A is \$722 $\{ \$800/1.108 \}$. Alternatively, in the absence of avail-

able market information for Asset B, the one-year market rate could be derived from Asset C using the build-up approach. In that case, the 2-year market rate indicated by Asset C (11.2 percent) would be adjusted to a 1-year market rate based on the term structure of the risk-free yield curve. Additional information and analysis also might be required to determine if the risk premium for one-year and two-year assets is the same. If it is determined that the risk premium for one-year and two-year assets is not the same, the two-year market rate of return would be further adjusted for that effect.

B11. In applying the discount rate adjustment technique to fixed claims, the adjustment for risk inherent in the cash flows of the asset or liability being measured is included in the discount rate. In some applications of the discount rate adjustment technique to cash flows that are other than fixed claims, an adjustment to the cash flows also may be necessary to achieve comparability with the observed asset or liability from which the discount rate is derived.

Expected Present Value Technique

B12. The expected present value technique uses as a starting point a set of cash flows that, in theory, represents the probability-weighted average of all possible cash flows (expected cash flows). The resulting estimate is identical to *expected value*, which, in statistical terms, is the weighted average of a discrete random variable's possible values where the respective probabilities are used as weights. Because all possible cash flows are probability weighted, the resulting expected cash flow is not conditional upon the occurrence of any specified event (as are the cash flows used in the discount rate adjustment technique).

B13. In making an investment decision, risk-averse market participants would consider the risk inherent in the expected cash flows. Portfolio theory distinguishes between two types of risk. The first is risk specific to a particular asset or liability, also referred to as unsystematic (diversifiable) risk. The second is general market risk, also referred to as systematic (nondiversifiable) risk. The systematic or nondiversifiable risk of an asset (or liability) refers to the amount by which the asset (or liability) increases the variance of a diversified portfolio when it is added to that portfolio. Portfolio theory holds that in a market in equilibrium, market participants will be compensated only for bearing the systematic or nondiversifiable risk inherent in the cash flows. (In markets that are inefficient or out of equilibrium, other forms of return or compensation might be available.)